

Appln. No. 10/039,390

Attorney Docket No. 10541-587

I. Listing of Claims

1. (Currently Amended) A hydrocarbon sensor for detecting hydrocarbons and a collector for collecting hydrocarbons in an air intake system of an engine, said sensor and collector comprising:

an element capable of releasably absorbing hydrocarbons ~~positioned in the air intake system of an engine~~, said ~~carbon~~ element being positioned in the air intake system upstream from said ~~engine~~, ~~so as to be wholly in the airflow engine~~;

said element having a plurality of chambers defined therein, said chambers arranged so as to allow air to pass through said element; and

said element ~~having~~ operatively connected to a detecting means for detecting the level of hydrocarbons absorbed by said element.

2. (Cancelled)

3. (Currently Amended) The hydrocarbon sensor and collector of claim ~~[[2]]~~ 1, wherein said detecting means ~~for detecting the level of hydrocarbons absorbed by said element~~ is includes a plurality of wires connected to a diagnostic system.

4. (Original) The hydrocarbon sensor and collector of claim 3, wherein said wires are attached to said element with a conductive epoxy.

5. (Original) The hydrocarbon sensor and collector of claim 3, wherein said wires are molded to said element.

6. (Original) The hydrocarbon sensor and collector of claim 5, wherein said chambers are octagonal and arranged in a honeycomb pattern.

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7. (Original) The hydrocarbon sensor and collector of claim 5, wherein said chambers are circular.

8. (Original) The hydrocarbon sensor and collector of claim 5, wherein said chambers are square.

9. (Currently Amended) The hydrocarbon sensor and collector of claim [[8]] 1, wherein said element absorbs hydrocarbons when said engine is not operating.

10. (Original) The hydrocarbon sensor and collector of claim 9, wherein said element releases hydrocarbons when said engine is operating.

11. (Currently Amended) The hydrocarbon sensor and collector of claim 10, wherein said hydrocarbons are released as a result of ~~the~~ an increased ~~air flow~~ airflow present in said air intake system when said engine is operating.

12. (Original) The hydrocarbon sensor and collector of claim 11, wherein said element is formed from carbon mixed with a binder material.

13. (Original) The hydrocarbon sensor and collector of claim 12, wherein said binder material is gray clay.

14. (Original) The hydrocarbon sensor and collector of claim 12, wherein said binder material is ceramic.

15. (Original) The hydrocarbon sensor and collector of claim 11, wherein said element is formed from carbon.

16. (Currently Amended) The hydrocarbon sensor and collector of claim ~~15~~ 1, wherein said ~~circuit~~ wires are connected to a wheat stone bridge circuit.

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17. (Currently Amended) A hydrocarbon sensor for detecting hydrocarbons and a collector for collecting hydrocarbons in an air intake system of an engine, said sensor and collector comprising:

an element capable of absorbing and releasing hydrocarbons, said element having a plurality of chambers defined therein to allow air to pass through said element and said element positioned in ~~the air~~ an intake flow system of an engine such that substantially all of the air airflow entering said engine passes through said element; and

a circuit in communication with said element and capable of measuring detecting the level of hydrocarbons absorbed by said element.

18. (Original) The hydrocarbon sensor and collector of claim 17, wherein said element is a carbon element.

19. (Original) The hydrocarbon sensor and collector of claim 18, wherein said circuit includes a wheat stone bridge.

20. (Original) The hydrocarbon sensor and collector of claim 19, wherein said circuit includes a microprocessor.

21. (Currently Amended) The hydrocarbon sensor and collector of claim 20, wherein said circuit is integrated with the an on-board computer of the vehicle.

22. (Original) The hydrocarbon sensor and collector of claim 21, wherein said carbon element absorbs hydrocarbons when an evaporative airflow passes through said carbon element.

23. (Original) The hydrocarbon sensor and collector of claim 22, wherein said carbon element releases hydrocarbons when a moderate to high airflow passes through said carbon element.

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24. (Currently Amended) A method for releasably absorbing hydrocarbons and ~~measuring~~ detecting the level of hydrocarbons in an engine air intake system of an engine, said method comprising the steps of:

positioning a hydrocarbon absorbing element having a plurality of chambers arranged so as to allow air to pass through said element in the air intake system upstream from the engine; and

~~conductively~~ operatively connecting said element to a circuit capable of ~~measuring the~~ detecting means for detecting the level of hydrocarbons in the air intake said element; and

detecting the level of hydrocarbons in said element.

25. (Original) The method of claim 24, further comprising the step of absorbing hydrocarbons into said element when said engine is not operating.

26. (Original) The method of claim 25, further comprising the step of releasing said absorbed hydrocarbons when said engine is operating.

27. (Currently Amended) The method of claim 26 31, wherein the step of ~~measuring~~ detecting the level of hydrocarbons in the air intake element is performed by measuring the change in resistance of said element.

28. (Original) The method of claim 27, further comprising the step of defining chambers in said element.

29. (Currently Amended) The method of claim 28, wherein an airflow flows through said chambers and said chambers condition said airflow by straightening the flow of air straighten said airflow as it flows through said element.

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30. (Currently Amended) The method of claim 29, ~~wherein the step of conditioning the airflow is performed by~~ further including the step of adjusting the size and shape of said chambers and the thickness of said element.